Knowledge, Growth and the Future of the University

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Thank you very much for inviting me. I am delighted and honoured to be able to share some thoughts at this inauguration of the academic year in the beautiful city of Macerata.

In my 20 or so minutes, I want to talk about two things. First, the fundamental causes of growth and prosperity. And second, about the role of the modern university in generating this prosperity, especially a university oriented to humanities and social sciences, like Macerata and my own home institution, the London School of Economics.

As is natural, I'll draw on my own experience – my research and my time working in many universities around the world such as MIT, UCL and Harvard. I have recently returned from politics as Chair of the Council of Economic Advisers and have also spent some years in the private sector running a consultancy and founding a tech start up. But buyer beware – *caveat emptor* – I am certainly no expert on Macerata or the Marche region! Although I am finding out a lot more about it on my first visit here.

If my talk has a single message it is this: *Pessimism of the intellect, but optimism of the will*. This is attributed to Antonio Gramsci, who said he borrowed it from 1915 Nobel Laureate Romain Rolland.

And although there is much cause for pessimism given the state of the world, there is also much cause for hope.

A dangerous moment for the world?

Let's start with the bad news. No one needs reminding that the world is currently in a very dangerous place.

A rules-based order emerged from the ruins of WW2 that was founded on three securities: **military** security through NATO, **economic** security through lower barriers to trade and **political** security through increasing democratic freedoms. Yet the hard truth is that all three of these securities were fundamentally underwritten by the United States.

But no more.

In the United States, President Donald Trump repudiates all of these basic tenets. In the words of Mark Carney, Canada's Prime Minister, on Jan 20th : "*there is a rupture in the world order, the end of a pleasant fiction and the beginning of a harsh reality, where geopolitics, where the large, main power, [off] geopolitics, is submitted to no limits, no constraints."*

One aspect of this rupture is close to our intellectual homes. Populist ideology denigrates expertise – there can be no "agreeable disagreement" or hope for a reasoned consensus. It is about declaring your position as loudly and aggressively as possible and refusing to compromise. Debates are won by the most powerful, not by the argument that chimes with reason and fact.

An example of this is the attack on US universities, the world's research powerhouses. In April 2025 the Trump administration stopped $2.2bn of federal research grants to Harvard. Although this was overturned in the lower courts in September, the battle continues. Harvard's $53bn endowment is the world's largest, so it is uniquely able to fight. But many other colleges are much less able and willing.

And the President attempted huge US research cuts in general. The National Institute for Health was to have $20bn cuts, 40% of its budget. The National Science Foundation and NASA to be cut by over half. The Office of Oceanic and Atmospheric Research was to be abolished as climate change is, apparently, "a hoax". Fortunately, some in Congress are fighting back and it looks like $30billion of these proposed cuts will not happen – this year at least.

The sources of growth

The timing of these attacks on expertise are deeply ironic. In December, I had the privilege of joining my colleague and co-author Philippe Aghion in Stockholm when he was jointly awarded the Nobel Prize for Economics. Aghion, Howitt and Mokyr received this prize for their contributions to understanding economic growth. Their modern theory of growth is that it is fundamentally due to increased knowledge: a dance between scientific knowledge which explains *why* something works and technical knowledge, which explains *how* something works.

The industrial revolution is *the* major example of this phenomenon. Income per person in England in the 13th to 17th Century was around £1,000 per year – or €1,100 – in today's prices.

This compares to over £30,000 today, a 30-fold increase. In other words, a couple of weeks work today gets you as much income as a year's toil did for our recent ancestors.

Growth is stimulated by more people and machines, but this growth of labour and capital is much less important than how these productive inputs are combined through better technologies. Technical change is not exogenous "manna from heaven" but arises from conscious choices and is shaped by economic incentives, government policy and social norms.

These economics of innovation imply an important role for governments. Market forces alone won't provide enough research and development. Knowledge is fundamentally different from other goods and services. We can't all eat the same loaf of bread, but we can all understand and benefit from *Pythagoras' Theorem* or *The Origin of the Species*. Moreover, because the inventor only captures a small amount of the value of her idea, the incentives to invest in innovation are too low.

This means that governments need to support knowledge creation through subsidising education and research.

Universities

Universities are not the only creators of knowledge, but they are a crucial part of the innovation system. In joint work which I carried out with my former student Anna Valero, we looked in detail at the economic impact of universities.

We digitized the location and founding date of every university in the world for the last thousand years. Italy was first off, the block with Bologna in 1088. Oxford had some teaching in 1096, but only really took off in 1167 when Henry II banned English students from attending the University of Paris. My undergraduate *alma mater*, Cambridge, only came along in 1209. Macerata is a lot more modern being founded in 1290. And this was still four centuries before Harvard came along in 1636. But the global higher education boom really came in the 20th century. In 1900, only one in a hundred young people went to university, but by the end of the 20th century this had risen to one in five.

We then tracked what happened to GDP per capita or income in the local region before and after universities were established. We focused on 1,500 regions in 78 countries since 1960 and found

that income rose significantly when a region added a new university. For the average country, local area incomes increased by seven times the cost of building and maintaining the university over the next decade or so.

Looking deeper we found four reasons for the growth-boosting effects of universities: demand, supply, innovation and democracy.

First, universities create greater local demand through the spending of staff and students. Students being students like to dine, drink and dance! But this is only a small part of the overall impact. The second factor – the supply of human capital is more important. One of the strongest empirical results in all economics is that educated workers are more productive and earn higher wages. Sure, many students will move after graduation, but some will stay in the area, and this "stickiness" enriches the skill base of the region and raises productivity.

Thirdly, partly through this richer skill base and partly through faculty collaborating with local businesses, innovations spring out from universities. Finally, and more subtly, universities help cement democratic values and institutions, through their emphasis on freedom of thought and expression. This is why authoritarians hate them so much.

Challenges and opportunities for Macerata

So, I believe the future is positive for idea creation through universities. And what's good for higher education should be good for Macerata University.

But there are challenges as well as opportunities. Let me focus on two.

The first challenge is the absence of *STEM.*

Most of the research on growth work focuses on scientific and technical knowledge. But Macerata, like the London School of Economics, specialises in humanities and social sciences. Is this a disadvantage?

In my view, the answer is no.

A grounding in the social science and humanities generates valuable analytic skills – the spark of creativity; the ability to use facts and reason to make a good argument and critical faculty to spot a bad one. These are all vital human skills in the age of Artificial Intelligence.

History teaches us that the impact of technological revolutions takes many decades to be revealed in economic growth. Take electricity. Thomas Edison and Joseph Swan independently invented usable light bulbs in the late 1870s. But as historian Paul David pointed out, it wasn't until the 1920s that manufacturing productivity took off. This was because the entire architecture of factories – both physical and organisational - needed to be radically changed to reap the benefits of the new opportunities.

Spending more on technology isn't enough. Managers need to know how to make best *use* of the new technologies, and to do this requires human skills.

It was a similar story with computers. In 1987 my former MIT colleague Bob Solow quipped that "You can see the computer age everywhere but in the productivity statistics". He meant that there had been a rapid proliferation of Information Technology in the 1970s and 1980s, but the growth of productivity (GDP per worker) had not increased. But not long after this "Solow Paradox" became famous, it ended. US productivity finally did accelerate from the mid-1990s to the mid-2000s. And the acceleration occurred precisely in those industries that either produced IT intensively, like semiconductors, or used IT intensively like retail and finance. I investigated the causes of this with my former students Nick Bloom and Raffaella Sadun, who are now at Stanford and Harvard respectively.

Using firm-level data from Italy and six other countries, we showed that increasing IT spending had little or no impact on company performance, unless it was accompanied by good managerial practices. These practices involved rigorous tracking of production and services, careful hiring and promotion, and the creativity to work in new ways with new skills. US owned firms were much better at doing this than European owned firms and this difference explained about half of the relatively weaker growth in the EU for the decade after 1995.

So, although engineers may create new technologies, making effective *use* of these technologies to drive prosperity requires managerial and entrepreneurial skills. Equipping students with the analytic and creative capabilities upon which these skills are built, is vital part of our job.

A second challenge is from the decline in the local population. Universities which rely a lot on local recruitment of students struggle in an age of falling birthrate . There is no solution except to look outwards and recruit more widely from other parts of the country and the rest of the world. Globalisation means that there is a very competitive market for overseas students, but cheap digital communication and marketing means that it is possible to reach such potential students more easily. There is an attraction in moving from expensive cities to places of beauty and higher quality of life. The experience of Covid and Working From Home has accelerated this trend. And, as I mentioned at the start of my talk, the attacks on US universities means that talented students from, say, China and India are increasingly looking to study outside of America.

Lessons

Let me end with three pleas: for more openness, more autonomy and more engagement.

An **open** attitude to new ideas is the *raison d'etre* of a university – ancient and modern. Today, this requires embracing the globalisation of seeking new students and faculty, wherever they live in the world. And also, a tolerance of dissenting views, even those we might find repugnant.

Strengthening the **autonomy** of universities is critical. The success of American and British universities is rooted in their greater freedom from government influence – in hiring, pay curriculum and seeking students. This is why the current US position is so misguided. To earn autonomy requires not just changes in government policy, but also a greater emphasis on raising money form philanthropic giving. In Europe, we should not copy the awful practices of some American universities giving preferential places to children of ex-students. But we *should* learn from the positive US example of building stronger relations with our alumni through networking events, sports and outreach.

Finally, we need to have more **engagement** with the world. Social media means academics no longer have to go through media gatekeepers to have influence as our findings can be taken more directly to citizens. I have also found that working directly for the government has been incredibly enriching. Being in the Council of Economic Advisors meant that I could actually implement growth policy rather than just write and talk about it. Working with Mario Draghi in the writing of the Draghi Report meant we had the direct ear of the European Commission. And

after working in the Health department under Tony Blair's government, I published many papers on reforming healthcare, enriching my research and policy impact.

Conclusion

In conclusion, I do feel optimistic for the future of universities and of Macerata. We in higher education are lucky enough to be the creators and custodians of knowledge and therefore of economic prosperity. Humans enjoy learning and want to learn throughout their lives.

Around me I see signs of the openness, autonomy and engagement that should be our credo,

Despite living in perilous times, I believe that there is a bright future for the modern university – if we are brave enough to reach for it.

Thank you.